INCH-POUND

A-A-55537
18 Dec 1998
SUPERSEDING
MS49007B
30 March 1992

COMMERCIAL ITEM DESCRIPTION

NOZZLE, OIL BURNER, PRESSURE ATOMIZING

The General Services Administration has authorized the use of this commercial item description (CID) for all Federal agencies.

1. SCOPE. This CID covers the general requirements for pressure atomizing oil burner nozzles. The nozzles covered by this CID are intended for commercial/industrial applications. These nozzles are used in oil-fired burners and heaters for the generation of hot water and/or steam for facility heating and similar applications.

2. CLASSIFICATION. This CID uses a classification system that is included in the Part Identifying Number (PIN).

a. Type (rated capacity)
b. Class (spray pattern, angle of spray)
c. Style (adapter with thread size)
d. Size (adapter length)

The PIN should be used for Government purposes to buy commercial products described by this CID. See Section 7.1. for an example of the PIN construction.

The general configuration of the nozzles should be as shown in Figure 1.

The nozzle will be furnished with an adapter when “A” is added in the dash number following the pattern and angle of spray. The thread type , 1/8 or 1/4 NPT required on the nozzle adapter, will be specified by including an ”8” for 1/8 NPT or a ”4” for 1/4 NPT, with “A” for Adapter. The length of the adapter will be specified by “S”, “L”, or “X” per the key in Figure 1.

The nozzle will be furnished with a filter or strainer as indicated in Table III.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: Defense Supply Center Columbus, ATTN: DSCC-VAI, Columbus, Ohio 43216-5000

3. SALIENT CHARACTERISTICS.

3.1 Design and construction. Oil burner nozzles supplied to the CID will be as specified in the order or contract by the PIN. The thread type required on the nozzle adapter and the length of the adapter will be specified in the order or contract by the PIN. See figure 1 and tables I, II, and III.

3.2 Filter or strainer. The nozzle will be furnished with a filter or strainer as indicated in Table III.

3.3 Materials. All parts will be of materials as listed below:

Adapter – brass
Nozzle – corrosion resistant steel
Filter – bronze
Screen – nickel copper alloy

3.4 Measurement and tolerances. All dimensions are in inches. Tolerances are as follows:

Fractional	± 0.03125
Angular	± 5°

3.5 Threads. Thread sizes will comply with FED-STD-H28A, Screw-Thread Standards for Federal Services.

3.6 Surfaces. The sealing surfaces between the adapter and the nozzle will have a 16 microinch finish or better.

3.7 Toxic chemicals/hazardous substances. The use of toxic chemicals, hazardous substances, or ODC will be avoided, when feasible.

4. REGULATORY REQUIREMENTS.

4.1 Recycled/recovered materials. The offerer/contractor is encouraged to use recovered materials to the maximum extent practical, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. QUALITY ASSURANCE PROVISIONS.

5.1 Product conformance. The products provided will meet the salient characteristics of this CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

5.2 Market acceptance. The following market acceptance criteria are necessary to document the quality of the product to be provided under this CID.

5.2.1. The company producing the item must have been producing the product offered meeting the requirements of this CID for at least five (5) years.

5.2.2. The company must have sold 5,000 units meeting this CID in the commercial market place over the past two (2) years.

6. PACKAGING.

6.1 Preservation, packing, and marking. Preservation, packing, and marking will be as specified in the contract or order.

7. NOTES.

7.1 Part Identifying Number (PIN). The following PIN numbering procedure is for Government purposes and does not constitute a requirement for the contractor.

A-A-55537 - XX - XXX - XX - X
- XX – Basic CID number
- XXX – Type
- XX – Class
- X – Style
- X – Size

PIN Example: A-A-XXXXX - 02 - H30 - A8 - L

Type - 02 = 0.50 rated capacity in GPH @ 100 psi; indicated in Table I.
Class - H30 = Hollow spray pattern; 30° angle of spray; indicated in Figure 1 and Table II.
Style - A8 = Adapter with 1/8 NPT will be furnished with nozzle, indicated in Figure 1.
Size - L = Long adapter (1.375 inch), indicated in Figure 1.

7.2 Ordering data. The contract or order should specify the following:

7.2.1. CID document number, revision, and CID PIN.

7.2.2. Quality assurance provisions.

7.2.3. Packaging requirements.

7.3 National Stock Numbers (NSN). The following is a list of NSNs assigned that correspond to this CID. This list may not be indicative of all possible NSNs associated with this CID.

NSN	Old PIN	New CID PIN
4530-00-467-3388	MS49007-05-S60	A-A-55537-05-S60
4530-00-288-8648	MS49007-10-H60	A-A-55537-10-H60
4530-01-119-7053	MS49007-10-S45	A-A-55537-10-S45
4530-01-395-4598	MS49007-11-H30-A4-L	A-A-55537-11-H30-A4-L
4530-00-507-7723	MS49007-11-S60	A-A-55537-11-S60
4530-00-419-9064	MS49007-12-SH45	A-A-55537-12-SH45
4530-00-419-9132	MS49007-15-H80	A-A-55537-15-H80
4530-00-276-7836	MS49007-15-SH60	A-A-55537-15-SH60
4530-01-003-4135	MS49007-16-SH80	A-A-55537-16-SH80
4530-00-234-0050	MS49007-17-H60	A-A-55537-17-H60
4530-00-200-0963	MS49007-18-H45	A-A-55537-18-H45
4530-00-001-3523	MS49007-18-S90	A-A-55537-18-S90
4530-00-274-6332	MS49007-18-SH80	A-A-55537-18-SH80
4530-01-162-6682	MS49007-19-H30	A-A-55537-19-H30

NSN	Old PIN	New CID PIN
4530-00-327-1841	MS49007-19-SH60	A-A-55537-19-SH60
4530-01-283-9734	MS49007-21-H80	A-A-55537-21-H80
4530-01-195-9265	MS49007-22-H80	A-A-55537-22-H80
4530-01-140-4912	MS49007-22-S30-A8-L	A-A-55537-22-S30-A8-L
4530-01-049-6113	MS49007-23-S90	A-A-55537-23-S90
4530-01-187-2510	MS49007-24-SH80	A-A-55537-24-SH80
4530-00-706-2966	MS49007-25-SH45	A-A-55537-25-SH45
4530-01-146-4213	MS49007-31-H70	A-A-55537-31-H70

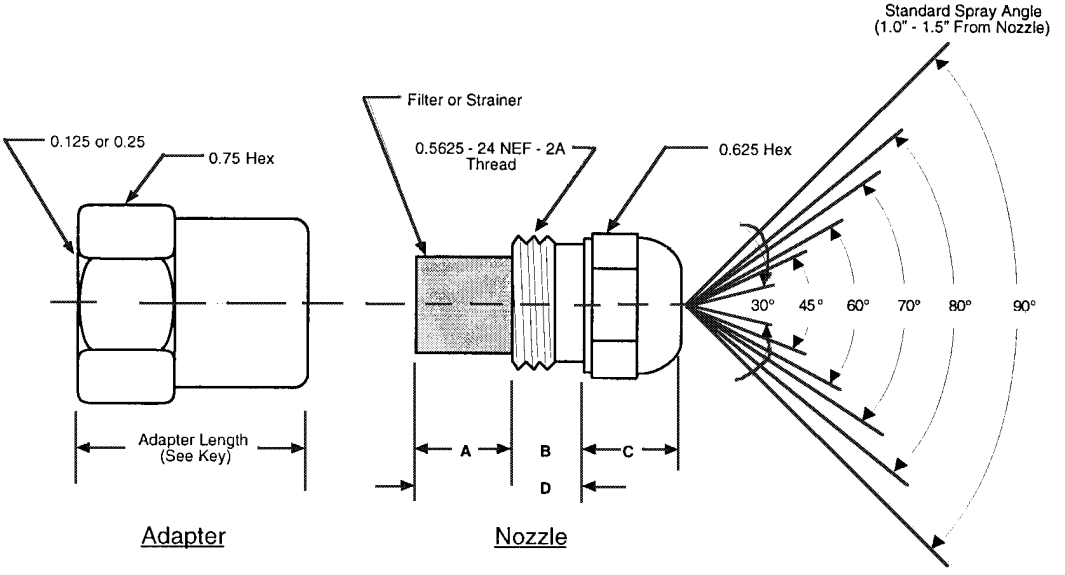
7.4 Sources of supply. The following is a list of suppliers that have provided nozzles meeting the requirements of this CID to the Government in the past. This is not an all-inclusive list or an endorsement of any of the listed suppliers.

CAGE	COMPANY NAME	LOCATION
03268	AMES IRON WORKS	Oswego, NY
0VW10	AM-MAC, INC.	Caldwell, NJ
11368	CENTURY ENGINEERING CORP.	Cedar Rapids, IA
1GF04	HAYNES ENTERPRISES	Cleveland, MS
21100	E-PRO, INC.	Seattle, WA
24999	DUNHAM BUSH, INC.	Harrisonburg, PA
2X264	ALL-SAFE, INC.	Hillard, OH
31923	TODD COMBUSTION, INC.	Shelton, CT
49937	RAY BURNER CO.	Richmond, CA
4B515	HALL GEORGE T CO., INC.	Anaheim, CA
54108	POWERMASTER-PACIFIC PRODUCTS	Middletown, PA
5A377	HARVEY, SID, OF OHIO, INC.	Willoughby, OH
5A784	SOUTHEASTERN SALES, CO.	Springfield, OH
5H185	DELAVAN, INC.	Bamberg, SC
60047	PALL AEROPOWER CORP.	New Port Richey, FL
6J861	BRIGGS, INC.	Omaha, NE
72156	ELGIN INDUSTRIES	Elgin, IL
76444	MONARCH MFG. WORKS INC.	Philadelphia, PA
7Z016	KAMPI COMPONENTS	Bristol, PA
80234	VAPOR CORP.	Niles, IL
8X611	JAMCO INDUSTRIES, INC.	Dayton, OH
95014	CYCLOTHERM DIV.	Oswego, NY

8. SOURCE FOR REFERENCE DOCUMENTS.

8.1 Federal Standards (FED-STD) are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA, 19111-5094.

8.2 The Federal Acquisition Regulation (FAR) 23.403 may be obtained from the Superintendent of Documents, US Government Printing Office, Washington, DC 20402.



Key:

Spray Pattern	Adapter Length	Nozzle Dimensions
S = Solid	S = Short (0.9375)	A = 0.46875
SH = Semi-Hollow	L = Long (1.375)	B = 0.28125
H = Hollow	X = Extra Long (2.0625)	C = 0.515625
		D = 0.75 Maximum

AM98-001-00-A0

Figure 1. Nozzle, oil burner, pressure atomizing.

Table I. Nozzle Type.

US gallons per hour, number 2 fuel oil (see note)											
Type	Rated GPH@ 100 PSI	Operating pressure PSI				Type	Rated GPH@ 100 PSI	Operating pressure PSI			
		125	150	175	200			125	150	175	200
01	0.40	0.45	0.49	0.53	0.56	30	9.00	10.06	11.02	11.91	12.73
02	0.50	0.56	0.61	0.66	0.71	31	9.50	10.60	11.70	12.60	13.50
03	0.60	0.67	0.74	0.79	0.85	32	10.00	11.18	12,25	13.23	14.14
04	0.65	0.73	0.80	0.86	0.92	33	10.50	11.70	12.90	13.90	14.90
05	0.75	0.84	0.92	0.99	1.06	34	11.00	12.29	13.47	14.55	15.55
06	0.85	0.95	1.04	1.13	1.20	35	12.00	13.40	14.70	15.90	17.00
07	1.00	1.12	1.23	1.32	1.41	36	13.80	15.40	16.90	18.30	19.60
08	1.10	1.23	1.34	1.45	1.55	37	14.00	15.65	17.15	18.52	19.79
09	1.20	1.34	1.47	1.59	1.70	38	15.30	17.10	18.70	20.30	21.60
10	1.25	1.39	1.53	1.65	1.77	39	16.00	17.89	19.60	21.17	22.63
11	1.35	1.51	1.65	1.79	1.91	40	17.50	19.60	21.40	23.20	24.80
12	1.50	1.68	1.84	1.98	2.12	41	18.00	20.12	22.04	23.81	25.46
13	1.65	1.84	2.02	2.18	2.34	42	19.50	21.80	23.90	25.80	27.60
14	1.75	1.96	2.14	2.32	2.48	43	20.00	22.26	24.49	26.46	28.28
15	2.00	2.24	2.45	2.65	2.83	44	21.50	24.00	26.40	28.40	30.40
16	2.25	2.52	2.74	2.98	3.18	45	22.00	24.60	26.94	29.10	31.11
17	2.50	2.80	3.06	3.30	3.54	46	24.00	26.80	29.40	31.80	34.00
18	3.00	3.35	3.68	3.97	4.25	47	26.00	29.07	31.84	34.39	36.77
19	3.50	3.91	4.29	4.63	4.95	48	28.00	31.30	34.30	37.00	39.60
20	4.00	4.47	4.90	5.30	5.66	49	30.00	33.60	36.80	39.70	42.50
21	4.50	5.04	5.51	5.93	6.36	50	35.00	39.10	42.90	46.30	49.50
22	5.00	5.59	6.13	6.61	7.07	51	40.00	44.70	49.00	53.00	56.50
23	5.50	6.15	6.74	7.27	7.78	52	45.00	50.40	55.20	59.30	63.70
24	6.00	6.71	7.33	7.94	8.48	53	50.00	55.90	61.30	66.10	70.70
25	6.50	7.26	7.98	8.60	9.20	54	55.00	61.50	67.40	72.70	77.70
26	7.00	7.82	8.58	9.25	9.90	55	60.00	67.00	73.50	79.40	84.00
27	7.50	8.38	9.19	9.91	10.60	56	70.00	78.20	85.70	92.50	99.00
28	8.00	8.94	9.79	10.58	11.31	57	80.00	89.40	98.00	106.00	113.50
29	8.30	9.28	10.20	11.00	11.80	58	90.00	100.90	110.50	119.20	127.50
						59	100.00	111.90	122.50	132.30	141.40

Note: Based on oil weighing 7.16 pounds per gallon @ 74°F and 34 Seconds Saybolt Universal (SSU) viscosity at 100°F.

Table II. Nozzle class.

ANGLE OF SPRAY SPRAY PATTERN - CAPACITY RANGE		
ANGLE OF SPRAY	SPRAY PATTERN	RATED CAPACITY GPH@ 100 PSI
30°	SOLID (S) SEMI-SOLID (SH) HOLLOW (H)	.50 TO 24.00 4.50 TO 20.00 .50 TO 8.00

Table III. Filter and strainer types.

FILTERS AND STRAINERS	
RATED CAPACITY	TO BE FURNISHED WITH NOZZLE
.40 TO 1.00	POROUS BRONZE FILTER (25 TO 50 MICRONS)

45°	SOLID (S) SEMI-SOLID (SH) HOLLOW (H)	.40 TO 30.00 2.25 TO 50.00 .50 TO 50.00
60°	SOLID (S) SEMI-SOLID (SH) HOLLOW (H)	.40 TO 4.00 2,25 TO 50.00 .40 TO 50.00
70°	SOLID (S) SEMI-SOLID (SH) HOLLOW (H)	.50 TO 60.00 2.25 TO 60.00 .50 TO 35.00
80°	SOLID (S) SEMI-SOLID (SH) HOLLOW (H)	.40 TO 100.00 2.25 TO 100.00 .40 TO 50.00
90°	SOLID (S) SEMI-SOLID (SH) HOLLOW (H)	.60 TO 50.00 2.25 TO 50.00 .60 TO 9.50

.60 TO .85	SCREEN STRAINER 200 MESH
1.10 TO 2.00	POROUS BRONZE FILTER (75 TO 100 MICRONS)
1.10 TO 10.58	SCREEN STRAINER 100 TO 120 MESH
11.00 TO 100.00	NO FILTER

Note:
The screen strainer can be substituted for the porous bronze filter on the following flow rates:

.40 to 1.00 and 1.10 to 2.00

MILITARY INTEREST

Custodians:
Air Force – 99

Review activity:
Air Force – 84

CIVIL AGENCY COORDINATION ACTIVITY

GSA-FSS

Preparing activity;
DLA - CC

(Project 4530-0013)